

WHAT IS CLAIMED IS:

1. A pressure transducer comprising a Bourdon tube, said Bourdon tube comprising a base, a tube attached to said base and a mechanical linkage converting movement of said tube into rotational movement of a shaft, a magnetic component being mounted to said shaft, said magnetic component emitting a magnetic field, a GMR sensor mounted relative to said magnetic component and being arranged to detect rotational movement of said magnetic component, said GMR sensor being adapted to output an electrical signal representative of rotation of said magnetic component.
2. The pressure transducer of Claim 1, wherein said magnetic member is a bar magnet.
3. The pressure transducer of Claim 1, wherein the magnetic member comprises a non-magnetic housing.
4. The pressure transducer of Claim 3, wherein said magnetic member further comprises a pair of magnets disposed within said non-magnetic housing.
5. The pressure transducer of Claim 1 in combination with a fluid-tight housing, said mechanical linkage being disposed within a liquid-filled chamber in said fluid-tight housing.
6. The pressure transducer of Claim 5, wherein said housing is divided into said fluid-filled chamber and a dry chamber, said GMR sensor being disposed within said dry chamber.
7. The pressure transducer of Claim 1, wherein said GMR sensor is mounted to a printed circuit board.
8. The pressure transducer of Claim 7, wherein said printed circuit board is mounted to said base of said Bourdon tube.
9. The pressure transducer of Claim 1, wherein said GMR sensor comprises sensing elements that are mounted generally perpendicular to an axis of rotation of said magnetic component.
10. The pressure transducer of Claim 1 further comprising a needle mounted to said shaft.

11. A pressure transducer comprising a Bourdon tube, said Bourdon tube comprising a base, a tube attached to said base and a mechanical linkage converting movement of said tube into rotational movement of a shaft, a magnetic component being mounted to said shaft, said magnetic component emitting a magnetic field, and a means for detecting rotational movement of said magnetic component, whereby said means outputs an electrical signal representative of rotation of said magnetic component.

12. The pressure transducer of Claim 11, wherein said means comprises a GMR sensor.

13. The pressure transducer of Claim 12, wherein said GMR sensor is generally perpendicular to an axis of rotation of said shaft.

14. The pressure transducer of Claim 11, wherein said means is connected to a printed circuit board.

15. The pressure transducer of Claim 14, wherein said printed circuit board is mounted to said base of said Bourdon tube.

16. The pressure transducer of Claim 11, wherein the magnetic member comprises a non-magnetic housing.

17. The pressure transducer of Claim 16, wherein the magnetic member further comprises a pair of magnets disposed within said non-magnetic housing.

18. A pressure transducer comprising a Bourdon tube, a mechanical linkage converting movement of said Bourdon tube into rotational movement, a shaft connected to said mechanical linkage whereby said shaft is rotated by said mechanical linkage, at least one magnetic component connected to said shaft, said magnetic component emitting a magnetic field, a sensor mounted relative to said magnetic component configured to detect movement of said magnetic field emitted by said magnetic component, said sensor outputting an electrical signal corresponding to movement of said magnetic component.

19. The pressure transducer of Claim 18, wherein said sensor is a GMR sensor.

20. The pressure transducer of Claim 19, wherein said GMR sensor comprises sensing elements that are mounted generally perpendicular to an axis of rotation of said magnetic component.

21. The pressure transducer of Claim 19, wherein said GMR sensor is mounted to a printed circuit board, said printed circuit board generally perpendicular to an axis of rotation of said magnetic component.

22. The pressure transducer of Claim 18, wherein the magnetic member comprising a non-magnetic housing.

23. The pressure transducer of Claim 22, wherein the magnetic member further comprises a pair of magnets disposed within said non-magnetic housing.

24. The pressure transducer of Claim 18, in combination with a fluid-tight housing, said mechanical linkage being disposed within a liquid-filled chamber in said fluid-tight housing.

25. A pressure transducer comprising a Bourdon tube, said Bourdon tube comprising a base, a tube attached to said base and a mechanical linkage converting movement of said tube into rotational movement of a shaft, a needle mounted to said shaft, said needle configured to rotate with said shaft to provide a mechanical output, a magnetic component being mounted to said shaft, said magnetic component emitting a magnetic field, a sensor mounted relative to said magnetic component and being arranged to detect rotational movement of said magnetic component, said sensor being adapted to output an electrical signal representative of rotation of said magnetic component.

26. The pressure transducer of Claim 25, wherein said sensor is a GMR sensor.

27. The pressure transducer of Claim 26, wherein said GMR sensor is mounted to a printed circuit board, said GMR sensor comprising sensing elements that are mounted generally perpendicular to an axis of rotation of said magnetic component.

28. The pressure transducer of Claim 25, wherein said needle and said magnetic component are mounted on opposite ends of said shaft.

29. The pressure transducer of Claim 25 in combination with a fluid-tight housing, said mechanical linkage being disposed within a liquid-filled chamber in said fluid-tight housing.

30. A method for converting pressure to an electrical signal, said method comprising the step of conversion of pressure to a rotational movement by a Bourdon tube, said Bourdon tube comprising a base, a tube attached to said base and a mechanical linkage

converting movement of said tube into rotational movement of a shaft, and the step of conversion of said rotational movement to an electrical signal by a magnetic component mounted on said shaft and a GMR sensor disposed relative to said magnetic component, said magnetic component emitting a magnetic field, said GMR sensor being disposed relative to said magnetic component and being adapted to detect rotational movement of said magnetic component, and said GMR sensor being adapted to output an electrical signal representative of rotation of said magnetic component.

31. The method of Claim 30, wherein said GMR sensor output electrical signal is conditioned by a printed circuit board.

32. The method of Claim 31, wherein said printed circuit board conditions said GMR sensor output electrical signal for a microprocessor.

33. The method of Claim 30, wherein said conversion of said rotational movement to an electrical signal further comprises conversion of GMR sensor output through a microprocessor.

34. The method of Claim 30, wherein said step of conversion of pressure to a rotational movement by a Bourdon tube occurs in a fluid-tight housing, said conversion taking place within a liquid-filled chamber in said fluid-tight chamber.

35. The method of Claim 34, wherein said step of conversion of said rotational movement to an electrical signal occurs in a chamber other than the liquid-filled chamber.

36. A method for converting pressure to a mechanical and electrical signal, said method comprising conversion of pressure to a rotational movement by a Bourdon tube, said Bourdon tube connected to a mechanical linkage, said mechanical linkage converting movement of said Bourdon tube into rotational movement of a shaft, said shaft comprising a needle and a magnetic component mounted thereon, said needle providing the mechanical signal, and conversion of said rotational movement to an electrical signal by said magnetic component and a GMR sensor disposed relative to said magnetic component, said magnetic component emitting a magnetic field, said GMR sensor being disposed relative to said magnetic component and being adapted to detect rotational movement of said magnetic component, and said GMR sensor being adapted to output an electrical signal representative of rotation of said magnetic component.